

## ABSTRACT

NULL DEEPENING FOR AN ADAPTIVE ANTENNA BASED  
COMMUNICATION STATION

A method and apparatus is described for modifying a smart antenna processing  
5 strategy determined from a set of signals received at an array of antenna elements of a  
wireless station, such as a set of weights for processing received antenna signals or  
forming a set of antenna signals for transmission. The method and apparatus uses the  
signatures of one or more interferers to produce a modified processing strategy that  
improves the nulling to the one or more interferers in that, when the modified strategy is  
10 applied on the downlink, the transmit signal strength in the direction of the one or more  
interferers is decreased, and, when the modified strategy is applied on the uplink, the  
sensitivity to signals from the direction of the one or more interferers is decreased.

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